FINAL Minutes
Chickahominy River and Tributaries - Bacteria TMDL Implementation Plan Development
Residential / Government Combined Work Group - Second Meeting
August 20, 2012
2:05 PM – 4:40 PM

In Attendance: Margaret Smigo (DEQ), Mark Alling (DEQ), Megan Sommers-Bascone (DCR), May Sligh (DCR), Mike Dieter (Hanover Co.), Olivia Hall (Henrico Co.), Marchelle Sossong (Henrico), Grace LeRose (City of Richmond), Ashley Parks (EEE Consultant for VDOT), James Beckley (citizen), Jody Bryan (citizen), Lynn P. Wilson (citizen), Christine Beish (citizen)

Meeting convened at 2:05 pm. Margaret began the meeting with a brief overview of the response to comments from the first meetings in June 2012, which are almost complete.

Ms. Smigo - The draft TMDL will go to EPA for review. The first workgroup BMPs were modeled by Maptech from loads and reductions needed and were placed online with the first meeting minutes. There is a revised list of BMPs and cost estimates in handouts for this meeting. From the first meeting minutes only J. Beckley had revisions.

Ms. Smigo – DEQ combined the Government and Residential WGs because each group deals with the same information and BMPs. The goals of the second meeting are to finalize types of BMPs, costs, and technical resources needed for BMPs. The primary goal of the meeting will be revising BMP estimates, with secondarily reviewing/revising educational needs.

Ms. Smigo - Christine Beish, James Beckley, and Olivia Hall from this meeting will be on the Steering Committee. Others at the meeting were invited – participation has not been limited. The Steering committee will review and help draft specific tasks in the Implementation Plan. (IP).

Ms. Smigo – BMP efficiencies from the James River Bacterial TMDL IP will be used for the Chickahominy River Bacterial TMDL IP.

Ms. Beish– Where are the efficiencies? Ms. Smigo – In a table in the handout (from James River – City of Richmond IP).

Ms. Smigo – The In the handout, impaired waters are in the table on page 2. We removed the subwatershed map from today's agenda.

Ms. Smigo – There are 5 year and 10 year implementation phases to meet reductions (or whatever time frame the working/steering folks would like to suggest - this is flexible). Wildlife is considered a background condition, although occasionally the DGIF can be consulted with Canada goose or raccoon problem resolution (nuisance populations).

Ms. Beish– How does IP information get to the DGIF? Ms. Smigo replied that we contact them with our needs. Christine will share a photo of geese in her area. She has interests in developing an educational program for those in her community regarding the ~100 geese in her area.

Ms. Smigo – Page 3 describes 2 BMPs in Table 1, grass filter strips and sediment retention / control devices. DEQ does not have the number and location data (DCR has information in database – exact locations of installed BMPs are kept private to protect the landowner).

Mr. Dieter asked if local data are included. Ms. Smigo replied that information was pulled from the DCR database. Mr. Dieter says the DCR database was updated for the Ches Bay TMDL, but we need it for watersheds – comments were made suggesting that not all BMPs were included in database (numbers looked low). Ms.Sommers-Bascone can find this in her database. It is unknown how often the database is updated.

James B. stated that costs of sediment retention basins were discussed in the agricultural WG meeting this morning. Is there any cost or area for these available by county? The TMDL modeler used $200 cost / acre treated. What do stormwater retention basins actually cost? Ms. Smigo stated that we needed to know how many acres treated for the stormwater retention basins (not acre constructed). Mr. Dieter stated that he could provide some examples of cost per acre treated from Hanover Co. He stated he knew offhand that was $13600 / impervious acre treated is a well known cost estimate for these. Margaret asked that if he could provide other examples from the County it might be beneficial to see variation. It is questionable as to whether these sediment retention basins are the same as "retention ponds" needed in the project. Ms. Sligh – She stated the % efficiencies for sediment retention basins was 50% and for bioretention basins was 90%. These were in the York IP document.

Ms. LeRose asked if DCR planned to do _____regularly. DCR replied yes. (Mark was unable to catch this – please advise if you can fill in the blank) *Follow-up – no additional information was provided so DEQ is not sure of what the intention was.*

Ms. Smigo – We really need BMP specifications, costs, and % efficiencies. We can include anything in the main BMP tables as long as there is an efficiency associated with it that is defensible.

Mr. Dieter – Hanover Co. already supplied this information. Stormwater retention ponds and sediment basins are temporary, so these are less expensive. Mr. Deiter said he could provide these costs. *Follow-up – Mr. Dieter provided this information. The cost for a sediment trapping device is $5/cy of excavation (134 cy/acre required by regulation) or $670/acre of drainage to the sediment trap. Mr. Dieter also provided the county-wide installed stormwater basins as well as county costs for construction.*

Ms. Smigo – On page 4, on residential BMPs, 25 of 35 straight pipes are to be replaced by sewer connections. Ms. Sossong – 70% is too high for percent of straight pipes fixed by sewer connection. For the IP, we must meet a "0" exceedance of the water quality standard. Connection may not be currently possible, however, it may be possible in the future. The group suggested a reduction of the straight-pipe number.

Mr. Dieter stated that failed septic systems cost $7800 to connect to sewer, but that it costs $31,838 per household when building a new subdivision. This $31K is not included in the IP cost estimates. Ms.

Smigo stated we do not know which will be new builds. Mr. Dieter stated that we can seek needed funds by mentioning the $31K for all new hook-ups.

Ms. Beish– New building is not an option in some areas, to which Mr. Dieter agreed.

Mr. Beckley added _____. (Mark wasn't able to catch this – please fill in the blank). *Follow-up -no additional information was provided to DEQ.*

Mr. Dieter and Ms. LeRose stated there were septic systems not connected to the public water system (that was how Richmond was able to help determine septic vs sewer numbers in James River City of Richmond IP). Ms. LeRose stated some of these could be septic failures.

Ms. Smigo needs to know which septic system hook-ups will be $7800 and which will be $31,838. Mr. Dieter uses that information and a GIS layer to know where the sanitary sewer will expand house hookups in these areas will be the $31,838. Ms. Sossong asked where these are. Mr. Dieter stated some subdivisions pay the $31,838. Hanover Co. tries to get grants. Some 50 home subdivisions with 50 homes on septic systems cost $millions. 230 units are needed in Table 2. Zero of those have sewer connections available. It is much too expensive per house. Ms. Sligh asked if there are community sewerage systems. Mr. Dieter stated none in Hanover Co. Mr. Dieter said that the 230 X $7800 was wrong. Most will be $31,838 because there is no sewer there.

Ms. Bryan stated that if sewer was available, there would be a house there. And that the number of homes in Hanover Co. was very low.

Ms. LeRose said the number not connected in the City of Richmond ~ 10%.

Ms. Bryan stated that failed septic systems are not an option at $7800, that $31,838 is more accurate.

Mr. Dieter stated that clusters of neighborhoods are without municipal sewer and there are no plans to retrofit them. Sewer service is only available in service areas and the Board of Supervisors is not ready to raise taxes for sewerage outside of the service areas. Ms. Smigo then said that we will not know which is $7800 vs. $31,838. Mr. Beckley had a solution: If connected to water but not sewer, then that home has a septic system. He remembered this from work time in Sussex Co.

Ms. Sligh asked if sewer connection is required at time of sale in Hanover Co. Mr. Dieter said no. Ms. Bryan stated that inspection of the septic system is required at time of sale or a buyer cannot get a loan. Ms. LeRose stated that in the City of Richmond a home sold without a septic system repair and at closing the realtor got a bill for an $8000 sewer repair.

> Mr. Dieter will provide the number of people not connected in sewer areas which should assist in determining which to apply at $7800 and at $31,838. *Follow-up – Mr. Dieter provided the suburban service area where utility services are provided. After speaking with the Hanover GIS*

dept., the % of households that are not connected to sewer in the majority of neighborhoods approaches zero. This has a bearing on the cost of new sewer connections being more expensive than proposed in the IP. Any new sewer connections will involve retrofitting new sanitary sewer service in neighborhoods without sanitary sewer. Cost for connection in this case as cited before will be an average of $31,838 based on a study of 20 neighborhoods without sewer service. The exception to this is in the old town Mechanicsville area. Between 5% and 10% of homes in the area are not connected to sanitary sewer that is already in place in the neighborhood. An estimate of total homes in the area not connected is between 50 and 100 homes. The cost to connect these homes is $10,000-$12000 each which includes the $7,838 sewer connection fee.

Ms. Wilson asked whether pumpouts are required and if there are compliance figures for pumpouts. Ms. Smigo stated that home must be pumped out on a 5 yr. schedule in the Ches Bay Pres. Area. Ms. LeRose stated that VDH sends a letter requiring pumpout but that no receipt is required for compliance. Ms. Sligh stated that Ches. Bay Local Assistance dept. (CBLAD) will check on pumpouts completed. Ms. Wilson said that obtaining pumpout compliance would help watersheds. Ms. Sligh said that CBLAD gets county reports. Ms. Wilson wants to know pumpout compliance figures, and wherever compliance is low, that area should be targeted for improvements. Mr. Beckley suggested that letters could be sent for non-compliance. Ms. Hall stated that she didn't have the figures in front of her but would be happy to get that figure for the group. Ms. Hall stated that compliance is not zero, but also is not 100%. *Follow-up – Ms. Hall provided that the rate of compliance in Henrico with the mandatory pumpout is 90.27%. Mr. Dieter provided that the rate of compliance in Hanover with the mandatory pumpout is 40%. He also provided a copy of the letters and information provided for both first and second letters.*

Ms. Smigo asked if Henrico Co. has a sewer system layer, with the percent of homes not connected to the line vs. those where a sewer line has not been built yet.

Ms, LeRose stated that in the City of Richmond, 10% of homes are one on city water but not sewer. Ms. Smigo asked if that is available for the Chickahominy basin only. Ms. LeRose will check. Mr. Dieter stated that he cannot break that information down by watershed in Hanover Co. Ms. Bryan suggested doing that by zip code or by tax maps. Ms. Wilson asked that was needed by subdivision or just generally. Ms. Bryan said that just depended on what is available. Mr. Dieter said one of these may be possible to do, but is it worth it because there would still not be money available.

Ms. Bryan said that a homeowner may not know if their septic system is failing unless water comes up in the yard.

Ms. LeRose stated that Chesterfield Co. found lots of straight pipes.

Ms. Smigo said it's possible to estimate pumpouts, needs to be agreement on the best way. Ms. Sligh stated that cost share criteria should be available by low income % in county. Ms. Smigo asked whether counties and city want more educational money to encourage pumpouts in the IP. Ms. Wilson suggested that if there is no reply to a pumpout letter, the county should send a second letter. Ms. Hall stated that

all Henrico pumpouts are in a database, if a homeowner does not pump out they get a letter. If there is no response, they get a second letter (and two staff people to perform educational component in communities). Ms. LeRose said there are staff in Richmond tasked with this as well. Hanover also sends letters to reach compliance with the pumpout requirement and includes educational pamphlets.

Mr. Beckley stated that in the first government WG meeting, people could get a reduced rate for sewage pumpouts. Mr. Dieter stated that 3/4th of homes in Hanover Co. are in the Ches. Bay protection area (all of project area is within the area). Ms. Hall cautioned that that offering reduced rates for sewage pumpouts would likely not be practical for the driver or those at the gate of the pumout station as it would be difficult to determine which pumpouts would be eligible for a reduced rate. Also, these trucks may have more than one load on them from different locations.

It was mentioned that more educational materials should be made available to homeowners. Ms. Hall said that Henrico is already sending educational information out. Ms. Smigo asked if we can offer an incentive for pumpouts – if that was something the group would like to include in the IP. She asked in the IP what is the compliance level for each county for different septic scenarios. Ms. Hall suggested caution with regard to incentives because they should be fair and not just offered to those who did not comply. It may have the undesired consequence of folks not getting systems pumped in the hopes of getting a free or low-cost pumpout. Ms. Smigo, Bryan and Parks stated all BMPs are voluntary in an IP. Ms. Smigo stated that none of the BMPs in the plan are intended to end up in facility permits.

Ms. Smigo stated that there is a BMP for pumpouts in the manual, they weren't initially included in this IP because pumpouts are considered "mandatory" every 5 years within the watershed. Mr. Dieter asked if there is a correlation between septic failures and pumpouts. Ms. Smigo said she can get data on this from VDH. (Follow up – Margaret found the following materials which could be read as reference: http://www.wakegov.com/NR/rdonlyres/C50E57E3-F027-4CF9-8E59-23F710F5713A/0/WakeCountySepticSystemStudy.pdf (education important), http://ndwrcdp.werf.org/documents/04-DEC-7/04-DEC-7TechnicalGuide.pdf (over-pumping can be detrimental to biological function)

Ms. Wilson again stated that we need to have data on pumpout compliance. Ms. Smigo asked the group again for a decision on more educational funds for pumpouts. There was no decision from the group. Ms. Wilson suggested that interns be recruited to take pumpout letters door to door. Ms. Smigo asked Mr. Dieter for a copy of Hanover's pumpout letter (later provided) and suggested the IP could include funds for a part-time staff person for door to door letters (Henrico has two staff members who do this). Ms. Beish suggested adding signage in septic problem areas too. *Follow-up – Ms. Wilson provided that funding for cost-share for pumpouts is available and should be utilized in this IP. Without mentioning it in the IP decreases the likelihood that SWCDs will have access to this funding. SRB-1 Septic Pumpout BMP is only eligible for 50% cost share with a maximum payment of not more than $150.*

Ms. Sligh and Ms. Sommers asked if there might be a group interested in educational program for pumpouts, perhaps a "septic social"? Margaret, in the interest of time moved the conversation along and can include pumpout in the IP for low-medium income (sliding scale) homeowners. To do this, it would help if localities could provide the % of homes in non-compliance with the mandatory pumpout requirement. That % could be applied to the number of homes that meet low-medium income criteria in order to derive a number of pumpouts needed. The educational aspect for pumpouts was left undecided because it was unclear of what need exists. Margaret suggested the steering committee revisit the education-pumpout item at a later time.

In Table 2 in the handout, Ms. Smigo asked if localities have bioretention, perhaps as in large raingardens. Ms. Sligh used a cost of $15000 in her last IP (York) for bioretention and stated this practice was included only in the last phase of the IP. Mr. Dieter said the maximum size is about 3 acres for this practice. Ms. Sommers-Bascone suggested using the James River – City of Richmond IP figures.

Ms. Smigo stated that rainbarrels were not included because there was sufficient reduction in other BMPs. They are primarily a volume reduction type BMP and collect rainwater from roofs which are not known to be large contributors of bacteria. Ms. Smigo said that in areas with CSOs, rainbarrels were used because the volume reduction is important in that scenario. Ms. LeRose stated we should focus on the cheapest BMPs and should include rainbarrels in this project.

Mr. Beckley said that if 1000 gallons of rain fall and 100 gallons are captured in rain barrels, that is a 10% flow reduction. Ms. Sommers-Bascone stated we should include raingardens and barrels so that there will be grant funding available.

Ms. LeRose stated we need consistency between the James and Chickahominy River IPs. If rainbarrels are in the James, they should be in the Chickahominy. Mr. Beckley stated we should not include rain barrels because there is not a significant bacterial reduction for them. Ms. Sligh said that DCR already has programs for rain barrels, why not get credit for them and include them? Ms. LeRose and Parks stated that anything that reduces stormwater volume helps, and rainbarrels are a good tool in educational programs. Ms. Sommers-Bascone added _____. (Please fill in what was missed). *Follow-up* - n*o additional information was provided to DEQ.*

Ms. Sligh said that rain barrels may not be feasible on every property. Ms. Beish said that many people would not want a dog waste composter, but rainbarrels would be more popular. Rainbarrels can retain some water which would otherwise flow over yards (potentially with dog or other wastes) to the waterway.

Mr. Dieter stated that Hanover sent out 4000 letters promoting pet composters but got only 40 responses. Forty composters were installed on the ground . Ms. Smigo said she needs this kind of information from counties and the city. Mr. Dieter reminded all that 40 responses does not automatically mean 40 composters on the ground (or within the Chick watershed). Ms. LeRose says

the city sent out 15,000 letters for composters and got 75 responses. Pet composters may reduce bacteria from pet waste when they are used but its difficult to get a measure of compliance once they have been distributed. They could be installed and never used or even sold/redistributed elsewhere so they might not be the best answer (though they aren't very expensive).

Ms. Smigo stated rainbarrels, education for pet waste and pumpouts, etc could go into an educational BMP. She needs efficiency % for rainbarrels, but the reduction is in volume not in bacteria so we would have to come to an agreement on what to use. Ms. Beish says that rainbarrels should be included in a home audit program, and should be in the table. Determining a cost estimate will also be tricky for a BMP such as this. Ms. Sligh suggested using $5000 per educational program with 50% efficiency, so that one educ. Prog per county equaled $5000 per county. She also suggested 20 pet waste digesters per county @$50. She also mention kennel club septic systems (k-9 cafo). She said in the York there was a pilot for a confined canine unit for kennals was estimated at @$20,000 per unit in 7 subwatersheds (one per subwatershed) at 100% bacteria reduction efficiency.. She also said that dogs now stay in kennels all year, whereas previously it was thought they were only kept in the kennels during hunting season.

Mr. Beckley asked if these numbers included veterinarians. Mr. Dieter asked if there are no standards for these? Ms. Sligh stated she talked with the Orange Co. kennel humane society about a cost share option, or place waste in a shallow ditch to be dried by sunlight, or a dog waster digester, as in the Moores Creek watershed. That could be an option for a more urban area.Ms. Smigo asked if we should include one k-9 cafo per watershed or per subwatershed? We do not have known dog kennels in the Chickahominy watershed, but could suggest one per sub watershed. Ms. Sligh and Beish concurred. Margaret suggested that to avoid over-estimating the need, the group include 1 of these systems per allocated subwatershed (11 subsheds). Should the need arise, the IP has them included. There was no opposition to this suggestion. If anyone knows of a kennel where such systems could be used please let Margaret know.

Ms. Smigo said raingardens cost $0.50 per ft2 in James River – City of Richmond IP, is this an acceptable cost for rain gardens? Ms. Sossong asked if these are retrofitted. Ms. Smigo said that to her knowledge all rain gardens are assumed to be retrofitted. Ms. LeRose asked if that meant 1000 ft2 costs $500. Margaret said she believe that to be correct.

Ms. Beish asked that the IP will differentiate between rain gardens and bioretention, this is confusing. Mr. Beckley said that a quarter acre raingarden does not drain a whole quarter acre. Ms. Smigo will ask the MapTech consultant to differentiate between raingardens and bioretention though she believes it will largely depend on site-specific needs. Perhaps a total acreage needed for bioretention/raingardens and then in another section of text state average raingarden size as opposed to bioretention size? *Follow-up – Mr. Dieter provided an estimate of bioretention coast between $3000-$4000/ acre treated.*

Ms. Smigo stated that in the handout we are now using 14.5 acres at $360/ac for vegetative buffer, and will include a description in the table. Group mentioned this number looked more appropriate than the original. Margaret was unsure if the estimates included both sides of streams or only one side – she will ask Maptech. The group was inclined to think it only included one side of the stream. Ms. LeRose asked if this was like stream restoration, to which Ms. Smigo said no, was only the buffer along riparian area. Mr. Dieter stated that stream restoration costs $250 / linear ft. Ms. Beish wants stream restoration in the IP if it can be included. Mr. Dieter and Ms. Beish agreed that the cost of stream restoration is for one side of a creek, the same as stream buffers. Ms. Smigo stated that the Maptech consultant prefers to use acres for stream buffers, there's still the question of one or both sides needing a buffer. One side may not need a buffer.

Ms. Smigo stated that in the IP and handout, pet waste composters eliminated the need to retention basins in residential areas., and if 2-dogs homes were used, only 11000 composters were needed. Ms. Hall asked what are the maintenance needs of a pet waste composter? Someone commented that enzymes must be added on a regular basis. Ms. Sligh suggested getting the number of planned communities, estimate 5 – 10 pet waster composters per neighborhood. Ms. LeRose and Ms. Sligh agreed that the number of composters in the IP handout are way too high and not likely to be fully implementable. Mr. Dieter said that Hanover gave away composters and only got a 1% response rate, he suggested using no more than 1000 pet-waste composters for the IP. Ms. Smigo stated she could reduce composters but it would bring back the need for retention basins. *Follow-up – Mr. Dieter provided that 37 pet waste composting units were given to Hanover Co. residents free of charge and the link to the free offer for the composting unit* *http://www.co.hanover.va.us/works/envirmnt_Pet_Waste_Brochure.pdf.*

Ms. Smigo asked if there were any objections to using a 50% efficiency rate for the pet-waste education BMP from Ms. Sligh's source (York IP), and the group said no. The James River – City of Richmond IP cited an efficiency of only 25%. Increasing this efficiency might help us when we decrease pet-waste composter numbers (to keep retention ponds needed low).

In a discussion of pet-waste education programs and needs, Mr. Dieter stated that in Hanover, neighborhoods volunteered to pay for recycling and add pet waste bag stations. Ms. Beish said that corn starch bags are better than plastic and Margaret stated that the cost estimate in the James River –City of Richmond IP were for cornstarch (biodegradable) bags. Ms. Smigo suggested using 250 pet waste stations, all in group agreed. Mr. Beckley asked if $the cost of 0.50 per mailing for the pet litter program (includes printing and mailing) was correct, Ms. Smigo said yes.

Ms. Hall had concerns about educational programs, people will call for proper disposal of waste. She wants a guidance document, as in is it OK to flush or bury dog waste, i.e. what is OK to do?. Someone referenced there is an EPA guidance document in the EPA MS4 website or the BMP clearing house.

Ms. Smigo asked how localities plan to reduce SSOs to zero, a 100% reduction was required in the TMDL. What would it cost to completely eliminate SSOs? Mr. Dieter and Ms. LeRose said it could not be done.

Ms. Smigo asked what would it take to reduce SSOs as much as possible – what additional things could localities do on top of what they are already doing to further reduce overflows and if money/time/staff were no object? To answer this, Ms. Sossong stated that the storm size (100? year storm) must be specified. Ms. LeRose said most SSOs are caused by grease clogging lines, and a grease trap would be needed on every house to prevent that. Ms. Sossong said there was no way to reduce overflows to 0. Ms. LeRose stated that the answer could be to fully fund the WQIP for $400-500 million. Mr. Dieter said he would ask Hanover Co. what they would do to eliminate all SSOs. Mr. Alling asked how much capacity would you use to stop all SSOs from pump stations, and estimate the cost from that. Ms. Sossong again asked storm size. Ms. LeRose said that TS. Gaston was a 1000 yr storm, and capacity could never be built for that size. Mr. Alling suggested a 100 yr storm size. Ms. Sossong said that Henrico's plan is to be able to catch all 10 yr storms in the future. Mr. Alling suggested localities provide an estimate with regard to the number of $billions it might cost. I & I is what brings stormwater into sewer lines. Mr. Beckley said do I & I surveys such as those performed by Sussex Co.Ms. Smigo asked Henrico, Hanover, and Richmond to ask managers what they would need to remove all SSOs and let her know. The IP should illustrate what localities are already doing with regard to SSOs (Henrico has provided very detailed information, but more information is needed from Hanover and City of Richmond to include on existing compliance for SSOs). Margaret reiterated that the purpose of estimates is to get localities funding to be used toward reduction of SSOs – they just need to let us know what their needs are. If more education is needed for citizens to reduce FOG (fats, oils, grease) that could be part of education program, if it's capacity, give us some details and costs and we'll include it as a BMP, if its I&I – what are specs and costs to enhance whatever you're currently implementing. *Follow-up – Mr. Dieter provided that after discussing this question with Hanover Co. public utilities department they cannot recommend a cost in this case. SSOs are not due to capacity deficiencies in the system, but are due to backups in the systems that occasionally occur due to the materials that are placed in to the system.*

There was a question as to whether LID would benefit SSO reduction and a short conversation followed. Margaret suggested that roof rentention would prevent stormwater from reaching the ground and potentially reduce seepage into the lines. There was not an agreement with regard to pervious pavers however because those would increase infiltration (and possibly seepage into lines).

Margaret thanked the participants for their efforts in the working groups and meeting adjourned at 5:30 pm.

Meeting concluded at 4:40 pm.